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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,319	03/24/2004	Kenichi Iida	00862.023516	4017

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EXAMINER

SHRIVASTAV, BRIJ B

ART UNIT PAPER NUMBER

2859

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/807,319

Applicant(s)

IIDA ET AL.

Examiner

Brij B. Shrivastav

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/24/04 and 7/20/0</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-5, 14-17, 22, 23, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoshita et al (US 6,381,419), and further in view of Kim (US 6,226,025).

As regards to claim 1 and 14, Kinoshita et al teach a method and an image forming apparatus having an image carrier, and a developing unit for forming an image by supporting a developer onto the image carrier, including a consumption amount detection unit configured to detect an amount of consumed developer in a case where an amount of usage of the developing unit has reached a predetermined amount, and teach a control unit (figure 1, column 4, lines 1-44, see abstract). However, Kinoshita et al do not teach the control unit changing an amount of the developer to be adhered to the image carrier in accordance with the amount of the consumed developer detected by the consumption amount detecting unit. Kim teaches the control unit changing an amount of the developer to be adhered to the image carrier in accordance with the amount of the consumed developer detected by the consumption amount detecting unit (figures 1-3, 8 and 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt teaching of Kim with the teaching of Kinoshita et al to provide enough developer as needed to improve print quality.

As regards to claim 22, Kinishita et al teach a developing unit detachable from an image forming apparatus (figure 1, see abstract), including a vessel containing a developer and a storage medium having a storage area for storing information concerning a characteristic of the developer (figure 1, column 4, lines 1-44). However, Kinishita et al do not teach the control unit of the image forming apparatus controlling to adjust an amount of the developer in the developing unit. Kim teaches the control unit of the image forming apparatus controlling to adjust an amount of the developer in the developing unit (figure 8 and 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt teaching of Kim with the teaching of Kinoshita et al to provide enough developer as needed to improve print quality.

As regards to claim 25, Kinishita et al teach a storage medium detachable from an image forming apparatus and provided in a developing unit having a vessel containing a developer (figure 1, see abstract), including a storage area for storing information concerning to a characteristic of the developer (figure 1, column 4, lines 1-44). However, Kinishita et al do not teach a control unit of the image forming apparatus performing an adjustment control of an amount of the developer in the developing unit. Kim teaches a control unit of the image forming apparatus performing an adjustment control of an amount of the developer in the developing unit (figure 8 and 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt teaching of Kim with the teaching of Kinoshita et al to provide enough developer as needed to improve print quality.

As regards to claims 2-5, 15-17, 23 and 26, Kinoshita et al do not further teach consumption amount detection unit, developer characteristics and threshold, developer adhered on the image carrier under various conditions. Kim teaches consumption amount detection unit, developer characteristics and threshold, developer adhered on the image carrier under various conditions. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt teaching of Kim with the teaching of Kinoshita et al to provide enough developer as needed to improve print quality.

2. Claims 7-13 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoshita et al (US 6,381,419), and further in view of Imado et al (JP 3426148).

As regards to claims 7 and 18, Kinoshita et al teach an image forming apparatus and method having a carrier and a developing unit for forming an image by supplying a developer onto the image carrier, including a consumption amount detecting unit configured to detect an amount of usage of the developing unit has reached a predetermined amount and a control unit ((figure 1, column 4, lines 1-44, see abstract). However, Kinoshita et al do not teach the control unit changing a driving time of the developing unit in accordance with the amount of the consumed developer detected by the consumption amount detecting unit. Imado et al teach the control unit changing a

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driving time of the developing unit in accordance with the amount of the consumed developer detected by the consumption amount detecting unit (see the DERWENT search record pages provided).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt teaching of Imado et al with the teaching of Kinoshita et al to provide enough developer as needed to improve print quality.

As regards to claims 8-13 and 19-21, Kinoshita et al do not further teach the control unit changing the driving time under different conditions of consumed developer detected or its color. Imado et al teach the control unit changing the driving time under different conditions of consumed developer detected or its color (see the DERWENT search record pages provided).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt teaching of Imado et al with the teaching of Kinoshita et al to provide enough developer as needed to improve print quality.

3. Claims 6, 24 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoshita et al (US 6,381,419), as applied to claims 1, 22 and 25 above, and in view of Kim (US 6,226,025), and further in view of Imado et al (JP 3426148).

As regards to claims 6, 24 and 27, Kinoshita et al and Kim do not further teach control unit under different conditions changing driving time of the developing unit. Imado et al teach control unit under different conditions changing driving time of the developing unit (see the DERWENT search record pages provided). It would have been

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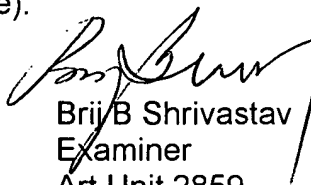
obvious to one of ordinary skill in the art at the time the invention was made to adapt teaching of Imado et al with the teaching of Kinoshita et al and Kim to provide enough developer as needed to improve print quality.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brij B. Shrivastav whose telephone number is 571-272-2250. The examiner can normally be reached on 7 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F. F. Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

September 2, 2005


Brij B Shrivastav
Examiner
Art Unit 2859
